

WHAT IS CLAIMED IS:

*Sub A2*

1. A method of updating parity data in a redundant array of independent disk (RAID) clustered environment comprising:

3 (a) locking parity data, without communicating with other nodes, for data managed in SCSI (small computer systems interface) disks in a RAID clustered system, wherein the locking prevents other nodes from modifying the parity;

6 (b) reading the parity data;

7 (c) generating new parity data by exclusive oring data from a first node and a second node;

9 (d) writing the parity data to a SCSI disk in the RAID system; and

10 (e) unlocking the parity data.

1 2. The method of claim 1, wherein the locking comprises issuing a RESERVE command.

*Sub A3*

3. The method of claim 1, wherein the unlocking comprises issuing a RELEASE command.

1 4. The method of claim 1, wherein the locking and reading steps are combined.

1 5. The method of claim 1, wherein the writing and unlocking steps are combined.

*Sub A4*

6. The method of claim 1 wherein the RAID system is RAID-4.

*1. Sub part*  
1 8. The method of claim 1 wherein the RAID system is RAID-5.

1 9. An apparatus for updating parity data in a redundant array of independent  
2 disk (RAID) clustered environment comprising:

3 (a) a plurality of SCSI (small computer systems interface) storage devices  
4 organized in a RAID clustered system;

5 (b) data stored in the plurality of SCSI storage devices;

6 (b) a first node, operatively coupled to the SCSI storage devices, that manages  
7 storage and retrieval of the data in the data storage devices, wherein the first node is  
8 configured to:

9 (i) lock parity data without communicating with other nodes, wherein  
10 the lock prevents other nodes from modifying the parity;

11 (ii) read the parity data;

12 (iii) generate new parity data by exclusive oring data from two nodes;

13 (iv) write the parity data to a SCSI disk in the RAID system; and

14 (v) unlock the parity data.

1 10. The apparatus of claim 9, wherein the first node locks the parity data by  
2 issuing a RESERVE command.

1 11. The apparatus of claim 9, wherein the first node unlocks the parity data by  
2 issuing a RELEASE command.

*12. The apparatus of claim 9, wherein the first node is further configured to*  
2 *combine the logic for locking and reading.*

*13. The apparatus of claim 9, wherein the first node is further configured to*  
2 *combine the logic for writing and unlocking.*

*14. The apparatus of claim 9 wherein the RAID system is RAID-4.*

*15. The apparatus of claim 9 wherein the RAID system is RAID-5.*

*16. The apparatus of claim 9 wherein the RAID system is RAID-6.*

*17. An article of manufacture, embodying logic to perform method steps of*  
2 *updating parity data in a redundant array of independent disk (RAID) clustered*  
3 *environment, the method steps comprising the steps of:*

- 4 *(a) locking parity data without communicating with other nodes, wherein the*  
5 *locking prevents other nodes from modifying the parity;*
- 6 *(b) reading the parity data;*
- 7 *(c) generating new parity data by exclusive oring data from two nodes;*
- 8 *(d) writing the parity data to a SCSI (small computer systems interface) disk in*  
9 *the RAID system; and*
- 10 *(e) unlocking the parity data.*

*18. The article of manufacture of claim 17, wherein the locking comprises*  
2 *issuing a RESERVE command.*

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19. The article of manufacture of claim 17, wherein the unlocking comprises  
2 issuing a RELEASE command.

1 20. The article of manufacture of claim 17, wherein the locking and reading steps  
2 are combined.

1 21. The article of manufacture of claim 17, wherein the writing and unlocking  
2 steps are combined.

1 22. The article of manufacture of claim 17 wherein the RAID system is RAID-4.

1 23. The article of manufacture of claim 17 wherein the RAID system is RAID-5.

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24. The article of manufacture of claim 17 wherein the RAID system is RAID-6.